

CLAIMS

1. Tool for a food processing machine, comprising

- a tubular casing,
- a shaft for rotatingly driving a food processing element,

and

- a centering and guiding element which ensures that the drive shaft is mounted for rotation in the tubular casing,
- the tubular casing and the drive shaft being provided, at the same first end, with removable means for locking to a machine body and releasable means for coupling to a main shaft of the machine, respectively,
- the centering and guiding element comprising removable means for fixing to the tubular casing in order to allow the drive shaft to be disassembled from the tubular casing, characterised in that the centering and guiding element is mounted in the tubular casing at the side of the first end, and the fixing means thereof are suitable for being locked in a correct position for fixing to the tubular casing by complementary locking means provided on the machine body when the tubular casing is fixed to the machine body in order to prevent the drive shaft from becoming inadvertently disassembled from the tubular casing when the tool is operated.

2. Tool according to claim 1, characterised in that the fixing means of the centering and guiding element are suitable for preventing the tubular casing from being fixed to the machine body when the fixing means are in an incorrect position for fixing to the tubular casing.

3. Tool according to claim 2, characterised in that the fixing means of the centering and guiding element are suitable for preventing the drive shaft and the main shaft from being coupled when the fixing means are in an incorrect position for fixing to the tubular casing.

4. Tool according to claim 1, characterised in that the centering and guiding element comprises a ring and a roller bearing which is arranged in the ring and which receives the drive shaft for rotation, and in that the tubular casing is provided with a radial shoulder which forms an axial stop, whilst the fixing means comprise at least one resilient lug which protrudes axially from the ring, the resilient lug having a free end which is turned at the side of the first end, the resilient lug being provided with a complementary hook for the radial shoulder and being capable of being deflected in a radial manner between a rest position, in which the hook is able to co-operate with the shoulder of the tubular casing in order to define the correct position for fixing the centering and guiding element in the tubular casing, and an inwardly bent position.

5. Tool according to claim 1, characterised in that the means for locking the tubular casing to the machine body comprise, at the side of the first end, at least one flexible axial resilient arm which is provided with a hook which is able to co-operate with a complementary shoulder of the machine body in order to form a snap-fitting connection.

6. Food processing machine, characterised in that it comprises a tool according to claim 1, a machine body to which the tool is removably fixed, and complementary means for locking the means for fixing the drive shaft in the

tubular casing, the locking means being provided on the machine body.

7. Machine according to claim 6, characterised in that the complementary locking means are suitable for co-operating with the means for fixing the centering and guiding element in order to prevent the tubular casing from being fixed to the machine body if the fixing means are in an incorrect position for fixing to the tubular casing.

8. Machine according to claim 7, characterised in that the complementary locking means are suitable for co-operating with the means for fixing the centering and guiding element in order to prevent the drive shaft and the main shaft from being coupled when the fixing means are in an incorrect position for fixing to the tubular casing.

9. Machine according to claim 6, in which the tool is further in accordance with claim 4, characterised in that the locking means comprise a rigid wall which is fixedly connected to the machine body and which extends axially at the side of the end at which the main shaft is coupled to the drive shaft of the tool, the wall being suitable for blocking the deflection of the resilient lug when in a completely assembled position which corresponds to the correct position for fixing the ring in the tubular casing and to the position for locking the tubular casing to the machine body.

10. Machine according to claim 9, characterised in that the rigid wall has an outer surface which substantially comes into contact with the inner surface of the resilient lug, in the completely assembled position.

11. Machine according to claim 9, characterised in that the rigid wall is a cylindrical wall which is coaxial with the main shaft and which has an outside diameter which is substantially equal to, whilst being less than, the distance from the inner surface of the resilient lug to axis of the drive shaft.

12. Machine according to claim 9, characterised in that the main shaft is provided with a driving means such that the end of the drive shaft of the tool and the driving means co-operate, when in a completely assembled position, over an axial driving length, and in that, when in a completely assembled position, the rigid wall covers the resilient lug over an axial interference length, so that the interference length is greater than the driving length.